

What is claimed is:

1. A wake up circuit comprising:

a comparison circuit adapted to receive a first signal representative of a charging current level provided to a battery via a path and a second signal representative of a predetermined wake up current level and to provide a comparison output signal in response to said first and second signal; and

an output decision circuit adapted to receive at least said comparison output signal and a selector signal from a selector circuit, said output decision circuit providing one of said comparison output signal and said selector signal to a switch to control a state of said switch, said switch coupled to said path.

2. The wake up circuit of claim 1, wherein said comparison output signal comprises an analog signal, said switch responsive to said analog signal to enter an intermediate conduction state to provide a current level to said battery representative of said predetermined wake up current level.

3. The wake up circuit of claim 2, wherein said analog signal comprises a voltage signal, said switch comprising a field effect transistor having a gate terminal receiving said voltage signal.

4. The wake up circuit of claim 1, wherein said selector signal comprises a digital signal, and wherein said switch is in a full conduction state in response to said digital signal in a first state.

5. The wake up circuit of claim 1, wherein said output decision circuit receives at least one additional input signal in addition to said comparison output signal and said selector signal, said at least one additional input signal being an enabling signal, said output decision circuit responsive to said enabling signal to provide said comparison output signal to said switch if said enabling signal is in a first state.

6. The wake up circuit of claim 1, wherein said output decision circuit receives at least one additional input signal in addition to said comparison output signal and said selector signal, said at least one additional input signal being a battery voltage signal, said output decision circuit responsive to said battery voltage signal to provide said selector output signal to said switch if said battery voltage signal is representative of a voltage level of said battery greater than a threshold voltage level.

7. The wake up circuit of claim 1, wherein said output decision circuit receives at least one additional input signal in addition to said comparison output signal and said selector signal, said at least one additional input signal

being a maximum wake up charge time signal, said output decision circuit responsive to said maximum wake up charge time signal to provide said selector output signal to said switch if said maximum wake up charge signal is representative of a continuous time of said output decision circuit providing said comparison output signal exceeding a maximum time interval.

8. The wake up circuit of claim 1, wherein said comparison circuit comprises an error amplifier, said error amplifier receiving said first signal and said second signal and providing said comparison output signal.

9. An apparatus comprising:

a wake up circuit, said wake up circuit comprising:

a comparison circuit adapted to receive a first signal representative of a charging current level provided to a battery via a path and a second signal representative of a predetermined wake up current level and to provide a comparison output signal in response to said first and second signal; and

an output decision circuit adapted to receive at least said comparison output signal and a selector signal from a selector circuit, said output decision circuit providing one of said comparison output signal and said selector signal to a switch to control a state of said switch, said switch coupled to said path.

10. The apparatus of claim 9, wherein said comparison output signal comprises an analog signal, said switch responsive to said analog signal to enter an intermediate conduction state to provide a current level to said battery representative of said predetermined wake up current level.

11. The apparatus of claim 10, wherein said analog signal comprises a voltage signal, said switch comprising a field effect transistor having a gate terminal receiving said voltage signal.

12. The apparatus of claim 9, wherein said selector signal comprises a digital signal, and wherein said switch is in a full conduction state in response to said digital signal in a first state.

13. A method comprising:

providing a first signal to a switch, said switch coupled to a path, said path coupled to a battery, said switch responsive to said first signal to enter an intermediate conduction state to provide a current level to said battery representative of a predetermined wake up current level; and

providing a second signal to said switch, said switch responsive to said second signal to enter a full conduction state when said second signal is in a first state.

14. The method of claim 13, wherein said first signal comprises an analog signal.

15. The method of claim 14, wherein said analog signal comprises a voltage signal, said switch comprising a field effect transistor having a gate terminal receiving said voltage signal.

16. The method of claim 13, wherein said second signal comprises a digital signal.

17. An apparatus comprising:

a first path configured to be coupled to a controllable DC power source;

a second path configured to be coupled to a battery;

a third path configured to be coupled to a system load, wherein said first, second, and third paths are coupled to a common node;

a first switch coupled to said first path to allow selective coupling of said controllable DC power source to said system load via said common node;

a second switch coupled to said second path to allow selective coupling of said battery to said common node; and

a wake up circuit comprising a comparison circuit and an output decision circuit, said comparison circuit adapted to receive a first signal representative of

a charging current level provided to said battery via said second path and a second signal representative of a predetermined wake up current level of said battery and to provide a comparison output signal in response to said first and second signal, said output decision circuit adapted to receive at least said comparison output signal and a selector signal from a selector circuit, said output decision circuit providing one of said comparison output signal and said selector signal to said second switch to control a state of said second switch.

18. The apparatus of claim 17, wherein said comparison output signal comprises an analog signal, said second switch responsive to said analog signal to enter an intermediate conduction state to provide a current level to said battery representative of said predetermined wake up current level.

19. The apparatus of claim 18, wherein said analog signal comprises a voltage signal, said second switch comprising a field effect transistor having a gate terminal receiving said voltage signal.

20. The apparatus of claim 17, wherein said selector signal comprises a digital signal, and wherein said second switch is in a full conduction state in response to said digital signal in a first state.